

PHYSICAL DIAGNOSIS
OF
LUNG DISEASES
BY
J. MAGEE FINNY, M.D.

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NOTES

ON THE

PHYSICAL DIAGNOSIS

OF

LUNG DISEASES.

BY

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ONDON: H. K. LEWIS, 136, GOWER-ST., W.C.

DUBLIN: FANNIN & CO., GRAFTON-ST.

1887.



DUBLIN :

PRINTED AT THE UNIVERSITY PRESS,

BY PONSONBY AND WELDRICK.

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P R E F A C E.

EACH year, at the commencement of my Clinical Instruction at Sir Patrick Dun's Hospital, I have been in the habit of demonstrating to the Class the methods of Physical Examination of the Chest in Health and in Diseases of the Lungs and Pleura. General interest on the part of the Students having been evinced in this Course, it has suggested itself to me that I might still further assist the beginner in the art of making a physical examination of the Chest, and in the clearer conception of Lung Diseases, by placing before him, in a handy form, a short synopsis of the methods of examination, and the information derivable therefrom. With this object in view, I have placed in a tabular form the methods

of Physical Examination, with a short and succinct description of each Physical Sign, and of the significance which it bears on the question of Diagnosis.

For the signs under the headings—Palpation, Percussion, and Auscultation, I am indebted to Dr. Douglas Powell's work on “Diseases of the Lungs,” Edit. 1886. The nomenclature of the various *râles* present in patients suffering from diseases of the lungs has long been a difficulty to the Student, and a cause of some confusion in their description by some writers. The adoption therefore of the simple, yet full, terminology arranged by Dr. Powell, with the assistance of the late Dr. Mahomed, and which, by the kind permission of the author, I set forth in these pages, will I hope remove uncertainty, and promote accuracy and uniformity in description of diseased conditions of the Lungs.

J. MAGEE FINNY.

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NOTES

ON THE

PHYSICAL DIAGNOSIS OF LUNG DISEASES.

INTRODUCTION.

IN the physical examination of the Chest, in health, and in Diseases of the Lungs and Pleura, five methods of examination are to be observed, and may all be requisite to obtain an accurate diagnosis, viz.:—

I. INSPECTION.

II. MENSURATION.

III. PALPATION.

IV. PERCUSSION.

V. AUSCULTATION.

I.—INSPECTION.

Many conditions can be recognized by observing the shape and movements of the chest walls, by noting the rate and depth of the respirations, and by marking the position of the heart's impulse. Care is to be taken not to confound with diseased conditions the altered shape and size of the chest to be met with, as the result of trades and occupations, or of congenital arrest of development, or of infantile disease, *e. g.* pigeon-breasted, ricketty.

N.B.—Inspection is aided by measurements with the double tape and the cyrometer.

INSPECTION—*continued.***Shape.**

More or less elliptical, the long diameter being transverse.

Bilateral enlargement.

[*Syn.* Barrel-shaped.]

The thorax approaches the shape it presents after a full inspiration.

Bilateral diminution.

[*Syn.* Alar or flattened chest.]

Unilateral enlargement.

The affected side is more rounded, and the shoulder is raised.

Retraction of one side.

Side appears small and contracted, with approximation of the ribs.

Movements and Rate.**Normal.**

Rate = 16-20 per minute; no obvious difference in movements of the two sides; in males and children the lower ribs and diaphragm (= *abdominal*) move most; in females the upper part (= *upper costal*).

Increased frequency of respiration.

[*Syn.* Dyspnoea.]

Normal in adults.

General emphysema.

Atrophy of the lungs, *e. g.* phthisis.

Pleuritic effusion, or (rarely) pneumothorax.

Pleuritic adhesions, binding the lung down so that it cannot expand after effusion has been absorbed ; or collapse of the lung ; phthisis ; cirrhosis.

Health.

- (a) Pain.
- (b) Febrile disturbance.
- (c) Unhealthy state of blood, *e. g.* anaemia.
- (d) Acute diseases of the air passages, *e. g.* laryngitis, asthma, pneumonia, capillary bronchitis.
- (e) Many cardiac diseases.
- (f) Distension of abdomen.

INSPECTION—*continued.*Movement and Rate—*continued.*

Diminished.

In frequency,

Inspiratory Dyspnœa.

Instead of expanding during inspiration, the chest may fall in to more or less extent.

Position of Heart's impulse.

Normal in left parasternal line ; in the fifth intercostal space an inch and a-half below, and an inch to the right of left nipple.

Displacement to the right side.

[*Syn.* Dexio-cardia.]

In extreme cases to the outside of right nipple.

Displacement to the left side.

[*Syn.* Sinistro-cardia.]

Displacement downwards.

Epigastric pulsation.

Certain conditions of central nervous system—apoplexy; narcotic poisoning; trance.

Obstruction to the entrance of air into the lungs,
e. g.—croup; laryngitis; pressure of a tumor on trachea or bronchus.

Healthy and well-formed chest.

- (a) Pleuritic effusion of fluid on the left side.
- (b) Pneumothorax.
- (c) *Rarely* cancer.
- (d) Cirrhosis of right lung or collapse with thickened pleura.

- (a) Extensive pleuritic effusion on the right side.
- (b) Aneurism or other tumor of mediastinum.
- (c) Cirrhosis of left lung, or carnification after pleural effusion.

Emphysema of both lungs, distending chest wall, and pressing heart downwards and to the right.

II.—MENSURATION.

Measurement gives accurate information as to size and shape of chest, general or local, and may be obtained by the use of an ordinary measuring-tape. The knowledge as to the circumference of the thorax is of little consequence, as compared with that of testing the size of the two sides of the chest, so as to determine the exact capacity of each, and the powers of expansion during inspiration.

The instruments required for this examination are the double tape-measure and the cyrtometer. The latter indicates the size as well as the shape of the thorax, and the outline can be traced on paper.

MENSURATION—*continued.***Normal.**

The right side measures in a line above the nipples $\frac{1}{4}$ — $\frac{1}{2}$ inch more than left.

Enlargement.**Bilateral.**

[*Syn.* Barrel-shaped.]

Unilateral,

Diminution.**Bilateral.**

Spine straight; all diameters were diminished.

Unilateral,

Healthy thorax in right-handed and muscular men. *Vice versa* in left-handed persons.

Emphysema of the lungs.

Compensatory hypertrophy of one lung; rapidly-growing soft cancer of lung; effusion of fluid into pleura, the result of inflammation; pneumothorax.

Phthisis; enlarged tonsils during childhood.

An adherent pleura, binding down the lung; collapse of lung, due to obstruction of a large bronchus in children; cancer; phthisis; cirrhosis.

III.—PALPATION.

Vocal Fremitus.

The transmission of laryngeal vibrations to the chest wall, appreciable by the hand.

Increased,

Diminished,

Absent,

Rhonchal Fremitus.

Transmission of the vibration of rhonchus to the hand applied to the chest.

Friction Fremitus.

Transmission of the vibrations of pleuritic friction.

IV.—PERCUSSION.

Normal resonance.

An arbitrary term, signifying the varying degrees of resonance of the different parts of the chest, within the range of health.

Increased resonance.

[*Syn.* Hyper-resonance.]

Tympanitic.

Drum-like note,

Healthy lung.

Consolidation of the lung.

Bronchial obstruction or separation of lung from parietes by thickened pleura.

Effusion of fluid, or air in the pleura.

Partial obstruction of the larger bronchi. Bronchitis.

Pleuritic roughening.

Health. Needs confirmation by other signs.

Air in the pleura. Emphysema on deep percussion.

PERCUSSION—continued.**Increased resonance**—continued.**Skodaic.**

A peculiar form of tympanitic resonance, of high pitch and great clearness.

Impaired resonance.

[*Syn.* Dulness of different degrees: hardness, wooden percussion.]

Amphoric resonance.

[*Syn.* Tubular note.]

The modified resonance sometimes elicited over a cavity, and often accompanied by 'cracked-pot sound' (*bruit de pot fêlé*).

Absence of resonance.

[*Syn.* Absolute dulness, tonelessness, flatness. 'Femoral dulness.']

V.—AUSCULTATION.**Normal breath-sounds.**

[*Syn.* Vesicular.]

Inspiratory sound soft and breezy; expiratory sound shorter, weaker, or even absent. There should be no perceptible pause between the inspiratory and expiratory sounds.

Lung in contact with surface relaxed, but not compressed by a moderate effusion into the pleura. Central consolidation in pneumonia will sometimes produce this note.

Incomplete consolidation.

N.B.—Co-existing increased resistance may often be appreciated during percussion.

Pulmonary excavation near the surface, and freely communicating with the bronchi. Normally obtained by percussing the trachea with the glottis open.

Consolidation, or lung displaced by fluid or tumour.
Thickened pleura.

Healthy lung.

AUSCULTATION—continued.**Normal breath-sounds—continued.****Exaggerated.**

[*Syn.* Puerile. Compensatory. Supplementary.]

Intensified normal breath-sound, due to increased movements of tidal air.

Weak.

[*Syn.* Feeble. Diminished. Partial suppression.]

Deficient movement of tidal air.

Suppressed.

[*Syn.* Absence of breath-sounds.]

Interrupted.

[*Syn.* Jerking. Wavy. Cog-wheel.]

Inspiratory sound partially or completely divided into two or three sounds.

Prolonged expiration.

Expiration lengthened to or beyond duration of inspiration.

Increased function. When heard over a portion of one lung signifies compensatory action to make up for deficiency or disease elsewhere. Normal in young children and in adults during violent exercise of the lungs.

Diminished function.

Lung distant from surface, or bronchus obstructed.

Irregular expansion, partial consolidation about small bronchi. May be of purely nervous origin through irregular contraction of muscles.

Partial consolidation of lung, or partial obstruction of bronchi, emphysema.

AUSCULTATION—*continued.***Vesiculo-tubular.**

[*Syn.* Harsh. Coarse. Sub-tubular. Indeterminate.]

The vesicular part of the breath-sound being partially or completely annulled, the tubular or glottic portion of that sound heard with greater distinctness, especially during expiration, which is prolonged.

Tubular.

[*Syn.* Bronchial. Blowing. Tracheal. May be high-pitched or whiffing, medium or low-pitched.]

A blowing breath-sound, the inspiration and expiration being about equal in pitch and duration, and distinctly divided.

Placing the mouth in position to pronounce a word commencing with guttural *ch* (χ), and drawing breath to and fro, imitates the sound with exactness. — (*Skoda.*)

Cavernous.

A blowing breath-sound of hollow quality, most so in the expiratory portion, which is usually of lower pitch than the inspiratory.

Commencing consolidation. Some authors use the term as descriptive of the roughened breath-sound of dry catarrh of the larger bronchi. (Heard normally in neighbourhood of bronchi.)

Hepatization or condensation of the lung. (Heard typically over trachea.)

Pulmonary excavation, or condensation with dilated bronchus.

AUSCULTATION—*continued.***Amphoric.**

Similar to the above, but with blowing characters and hollowness intensified.

Adventitious sounds.—Rhonchi.

[*Syn.* Râle (râle and rhonchus being indifferently used by many authors.]

Musical sounds, generated by partial obstruction in a bronchial tube imparting vibrations to the air current.

Sonorous rhonchi.

[*Syn.* Sonorous râle.]

Low-pitched loud snoring,

Sibilant rhonchi.

[*Syn.* Sibilus.]

High-pitched whistling,

Stridor.

[*Syn.* Stridulous rhonchus or râle.]

A coarse, vibrating rhonchus, generated at the larynx, or by pressure on the main bronchus.

Large pulmonary cavity.

Bronchitis of the larger tubes.

Bronchitis, or spasmodic narrowing of the medium or fine tubes.

Pressure of a malignant or aneurysmal tumour upon a main bronchus or the trachea. Sometimes produced by laryngeal paralysis.

AUSCULTATION—*continued.***Râles.**

Moist sounds or rattles, produced by the bubbling of air through fluid in the lung or bronchi.

Small crackling râles.

[*Syn.* Subcrepitant râles. Moist crepitations.]

A fine râle, produced in the minute bronchioles and alveoli of consolidated lung, consisting of numerous small, sharply-defined crackles. Chiefly audible during inspiration, but in less degree with expiration.

Medium crackling.

[*Syn.* Crepitant râles.]

Similar to above, but larger,

Large crackling.

[*Syn.* Moist crackling.]

Crackles of larger size, and fewer in number, produced in minute pulmonary cavities.

Gurgling.

[*Syn.* Cavernous râle.]

Larger and more liquid râles, produced in cavities of medium and large size.

Thin fluid in minute bronchial tubes, with consolidation of the lung. Resolving pneumonia.

Resolving pneumonia. Broncho - pneumonia.
Rapid caseous pneumonic softening.

Softening pneumonia or tubercle.

Cavity in the lung.

AUSCULTATION—*continued.***Râles**—*continued.***Small bubbling.**

[*Syn.* Sub-mucous or muco-crepitant râle.]

A râle produced by the bubbling of air through mucus in the finer bronchi, and more or less muffled by transmission through spongy lung.

Medium }
Large } bubbling.

[*Syn.* Mucous râles. Tracheal rattles.]

Similar râles, generated in larger tubes,

Clicking sounds.

[*Syn.* Dry crackle.]

Single sounds, or few in number, mostly limited to inspiration, and of sticky, semi-fluid character.

Crepitation.

[*Syn.* Pneumonic crepitation.]

A fine, dry, crackling sound, in which the crackles are infinitely small and even, and occupy chiefly the latter part of inspirations.

Capillary bronchiitis. Pulmonary oedema.

Bronchitis of larger tubes. Secretion collecting in the trachea during last moments of life.

Commencing softening of tubercular deposits in the lungs. Emphysema.

Early stage of pneumonia. Sometimes in a certain degree of pulmonary oedema, and during the first few breaths in lungs which have not been used, in bed-ridden subjects, and after aspiration of plural effusion.

AUSCULTATION—continued.**Râles—continued.****Metallic tinckling.**

The metallic resonance sometimes imparted to a moist sound by a large pulmonary or other cavity.

Splash.

[*Syn.* Hippocratic succussion.]

The succession of air and fluid produced by the shock of cough in a large cavity, or by shaking the patient, with the ear applied over a hydro-pneumo-thorax.

Bell-sound.

[*Syn.* *Bruit d'aurain.*]

A metallic ring heard on sharp percussion over a pneumo-thorax, commonly elicited by the use of coins.

Friction.

A rubbing sound, produced by the movement of two surfaces of the pleura, which are in contact and inflamed and roughened. This sound is *dry* or *moist*, according to the amount and nature of the effused lymph.

A large, dense-walled pulmonary cavity, or a pleuritic cavity. Pyo-pneumo-thorax.

A large cavity containing air and fluid. Hydro- or pyo-pneumo-thorax.

Pneumo-thorax.

Pleurisy.

AUSCULTATION—*continued.***Voice-sounds.****Normal.**

The sound of the voice transmitted through the healthy lung.

Diminished,**Annulled or absent,****Bronchophony.**

[*Syn.* Tubular voice.]

The loud transmission of the laryngeal vibrations, apart from articulation.

Pectoriloquy.

The clear transmission of articulate sounds.

Heard best during whispering. Bronchophony may or may not accompany it.

Ægophony.

[*Syn.* Goat's-bleat-sound.]

High-pitched, tremulous modification of the voice, due to the transmission of the upper tones or harmonics.

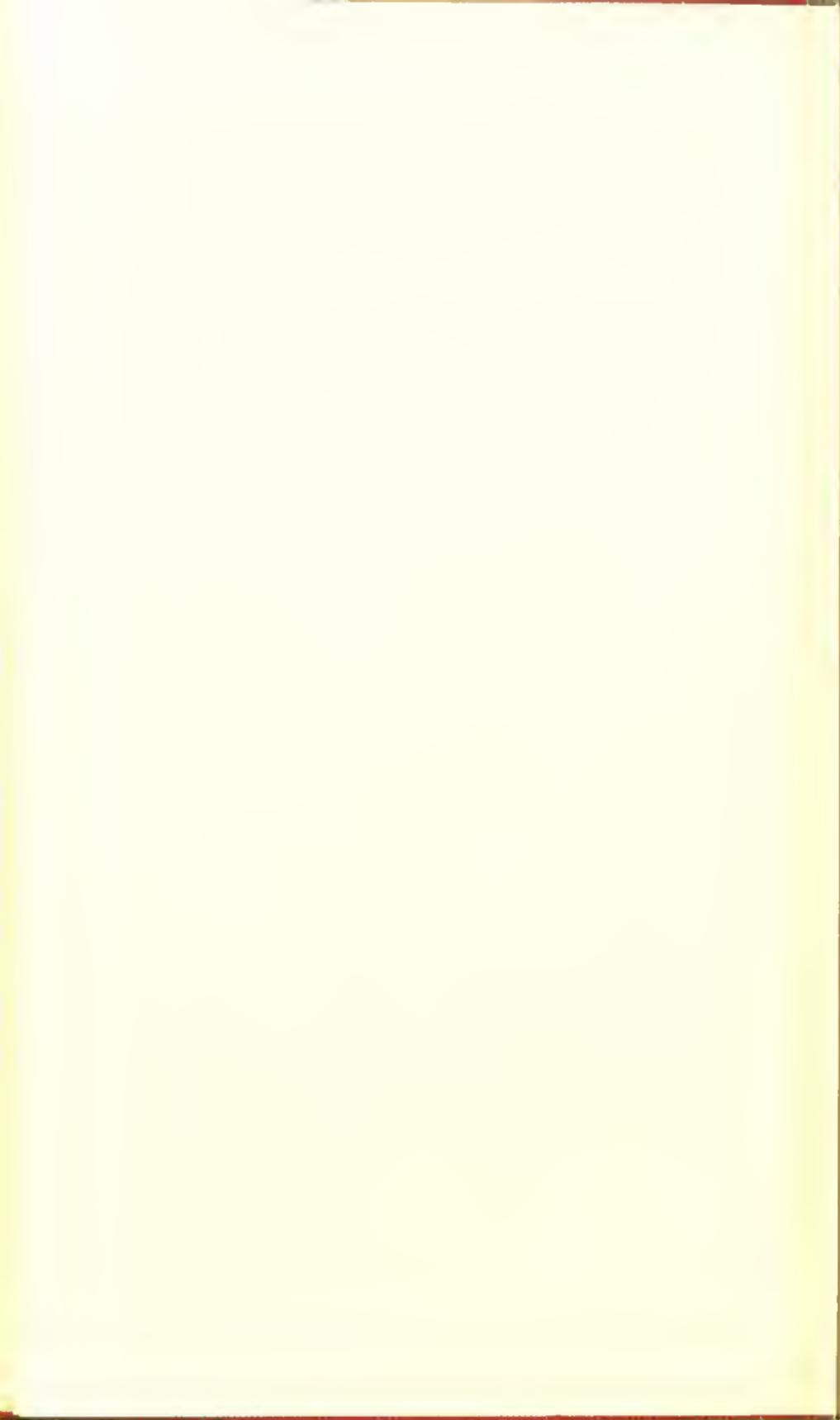
Voice is weak ; or when parietes thick from fat or dropsy.

Lung separated from chest wall by fluid or growth.

Pulmonary consolidation.

Cavity in the lung ; may be simulated in sero-fibrinous pleuritic effusion in phthisical consolidation.

Pleuritic effusion.



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